SEQUENCE LISTING

<110> PAN Shen Quan

<120> VISUALIZATION OF INTRODUCED DNA (VOID) IN TRANSIT BY IN SITU HYBRIDIZATION

<130> 3671-0110PUS1

<140> US 10/510,034
<141> 2004-10-01

<150> US 60/368,524
<151> 2002-04-01

<160> 11

<170> PatentIn version 3.2

<210> 1
<211> 887
<212> PRT
<213> Arabidopsis thaliana

<400> 1

Met Ala Lys Ser Ser Ala Asp Asp Glu Glu Leu Arg Arg Ala Cys Glu
1 5 10 15

Ala Ala Ile Glu Gly Thr Lys Gln Ser Ile Val Met Ser Ile Arg Val
20 25 30

Ala Lys Ser Arg Gly Val Trp Gly Lys Ser Gly Lys Leu Gly Arg Gln
35 40 45

Met Ala Lys Pro Arg Val Leu Ala Leu Ser Val Lys Ser Lys Gly Pro
50 55 60

Arg Lys Lys Ala Phe Leu Arg Val Met Lys Tyr Ser Ser Gly Gly Val
65 70 75 80

Leu Glu Pro Ala Lys Met Tyr Lys Leu Lys His Leu Ser Lys Val Glu
85 90 95

Val Ile Thr Asn Asp Pro Ser Gly Cys Thr Phe Thr Leu Gly Phe Asp
100 105 110

Asn Leu Arg Ser Gln Ser Val Ala Pro Pro Gln Trp Thr Met Arg Asn
115 120 125

Thr Asp Asp Arg Asn Arg Leu Leu Val Cys Ile Leu Asn Ile Cys Lys
130 135 140

Asp Val Leu Gly Arg Leu Pro Lys Val Val Gly Ile Asp Ile Val Glu
145 150 155 160

Met Ala Leu Trp Ala Lys Asp Asn Thr Pro Val Val Thr Thr Gln Arg
165 170 175

Ser Thr Glu Asp Gly Glu Pro Val Ala Glu Ser Val Thr Glu Ser Asp
180 185 190

Leu Lys Val Thr Val Glu Lys Glu Leu Val Ser Gln Ala Glu Glu Glu
195 200 205

Asp Met Glu Ala Leu Leu Gly Thr Tyr Val Met Gly Ile Gly Glu Ala
210 215 220

Glu Ala Phe Ser Glu Arg Leu Lys Arg Glu Leu Gln Ala Leu Glu Ala
225 230 235 240

Ala Asn Val His Ala Ile Leu Glu Ser Glu Pro Leu Val Asp Glu Val
245 250 255

Leu Asn Gly Leu Glu Ala Ala Thr Asn Ile Val Asp Asp Met Asp Glu
260 265 270

Trp Leu Gly Ile Phe Asn Ile Lys Leu Arg His Met Arg Glu Asp Ile
275 280 285

Glu Ser Ile Glu Thr Arg Asn Asn Lys Leu Glu Met Gln Ser Val Asn
290 295 300

Asn Lys Ala Leu Ile Glu Glu Leu Asp Lys Val Ile Glu Arg Leu Arg
305 310 315 320

Val Pro Ser Glu Tyr Ala Ala Ser Leu Thr Gly Gly Ser Phe Asp Glu
325 330 335

Ala Asp Met Leu Gln Asn Ile Glu Ala Cys Glu Trp Leu Ala Lys Ala
340 345 350

```
Leu Arg Gly Leu Glu Val Pro Asn Leu Asp Pro Ile Tyr Ala Asn Met
        355                 360                 365

Arg Ala Val Lys Glu Lys Arg Ala Glu Leu Glu Lys Leu Lys Ala Thr
    370                 375                 380

Phe Val Arg Arg Ala Ser Glu Phe Leu Arg Asn Tyr Phe Ala Ser Leu
385                 390                 395                 400

Val Asp Phe Met Val Ser Asp Lys Ser Tyr Phe Ser Gln Arg Gly Gln
                405                 410                 415

Leu Lys Arg Pro Asp His Ala Asp Leu Arg Tyr Lys Cys Arg Thr Tyr
            420                 425                 430

Ala Arg Leu Leu Gln His Leu Lys Gly Leu Asp Lys Asn Cys Leu Gly
        435                 440                 445

Pro Leu Arg Lys Ala Tyr Cys Ser Ser Leu Asn Leu Leu Leu Arg Arg
    450                 455                 460

Glu Ala Arg Glu Phe Ala Asn Glu Leu Arg Ala Ser Thr Lys Val Ser
465                 470                 475                 480

Arg Asn Pro Thr Val Trp Leu Glu Gly Ser Thr Gly Ser Ser Gln Asn
                485                 490                 495

Ala Asn Thr Asp Thr Ser Ala Val Ser Asp Ala Tyr Ala Lys Met Leu
            500                 505                 510

Thr Ile Phe Ile Pro Leu Leu Val Asp Glu Ser Ser Phe Phe Ala His
        515                 520                 525

Phe Met Cys Phe Glu Val Pro Ala Leu Ala Pro Pro Gly Gly Ala Gly
    530                 535                 540

Asn Asp Lys Lys Ser Gln Ser Asn Asn Asp Asp Gly Asn Asp Asp Asp
545                 550                 555                 560

Asp Leu Gly Ile Met Asp Ile Asp Glu Thr Asp Lys Lys Pro Gly Lys
                565                 570                 575

Asn Ser Pro Asp Leu Thr Ala Leu Asn Glu Ser Leu Gln Asp Leu Leu
```

580 585 590

Asp Gly Ile Gln Glu Asp Phe Tyr Ala Val Val Asp Trp Ala Tyr Lys
595 600 605

Ile Asp Pro Leu Arg Cys Ile Ser Met His Gly Ile Thr Glu Arg Tyr
610 615 620

Leu Ser Gly Gln Lys Ala Asp Ala Ala Gly Phe Val Arg Leu Leu Leu
625 630 635 640

Gly Asp Leu Glu Ser Arg Val Ser Met Gln Phe Ser Arg Phe Val Asp
645 650 655

Glu Ala Cys His Gln Ile Glu Arg Asn Glu Arg Asn Val Arg Gln Met
660 665 670

Gly Val Leu Pro Tyr Ile Pro Arg Phe Ala Ala Leu Ala Thr Arg Met
675 680 685

Glu Gln Tyr Ile Gln Gly Gln Ser Arg Asp Leu Val Asp Gln Ala Tyr
690 695 700

Thr Lys Phe Val Ser Ile Met Phe Val Thr Leu Glu Lys Ile Ala Gln
705 710 715 720

Gln Asp Pro Lys Tyr Ala Asp Ile Leu Leu Leu Glu Asn Tyr Ala Ala
725 730 735

Phe Gln Asn Ser Leu Tyr Asp Leu Ala Asn Val Val Pro Thr Leu Ala
740 745 750

Lys Phe Tyr His Gln Ala Ser Glu Ala Tyr Glu Gln Ala Cys Thr Arg
755 760 765

His Ile Ser Met Ile Ile Tyr Tyr Gln Phe Glu Arg Leu Phe Gln Phe
770 775 780

Ala Lys Lys Ile Glu Asp Phe Met Tyr Thr Ile Thr Pro Glu Glu Ile
785 790 795 800

Pro Phe Gln Leu Gly Leu Ser Lys Val Glu Leu Arg Lys Met Leu Lys
805 810 815

Ser Ser Leu Ser Gly Val Asp Lys Ser Ile Ala Ala Met Tyr Lys Lys
820 825 830

Leu Gln Lys Asn Leu Ala Ser Glu Glu Leu Leu Pro Ser Leu Trp Asp
835 840 845

Lys Cys Lys Lys Glu Phe Leu Asp Lys Tyr Glu Ser Phe Val Gln Leu
850 855 860

Val Ala Lys Val Tyr Pro Ser Glu Asn Val Pro Gly Val Thr Glu Met
865 870 875 880

Arg Gly Leu Leu Ala Ser Met
885

<210> 2
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic GUS-1 primer

<400> 2
cgtcctgtag aaacc 15

<210> 3
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic GUS-2 primer

<400> 3
acgcacagtt catag 15

<210> 4
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic BIN19-1 primer

<400> 4
ttgctcatgt taccg 15

<210> 5
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic BIN19-2 primer

<400> 5
gcagttccgc aaata 15

<210> 6
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligo-105 primer

<400> 6
gaagaattcg aacttgacgc cgatacc 27

<210> 7
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligo-107 primer

<400> 7
aggctgcaga catgcgtatt ttcg 24

<210> 8
<211> 894
<212> PRT
<213> Homo sapiens

<400> 8

Met Thr Ala Ile Lys His Ala Leu Gln Arg Asp Ile Phe Thr Pro Asn
1 5 10 15

Asp Glu Arg Leu Leu Ser Ile Val Asn Val Cys Lys Ala Gly Lys Lys
20 25 30

Lys Lys Asn Cys Phe Leu Cys Ala Thr Val Thr Thr Glu Arg Pro Val
35 40 45

```
Gln Val Lys Val Val Lys Val Lys Lys Ser Asp Lys Gly Asp Phe Tyr
    50                  55                  60

Lys Arg Gln Ile Ala Trp Ala Leu Arg Asp Leu Ala Val Val Asp Ala
65                  70                  75                  80

Lys Asp Ala Ile Lys Glu Asn Pro Glu Phe Asp Leu His Phe Glu Lys
                85                  90                  95

Ile Tyr Lys Trp Val Ala Ser Ser Thr Ala Glu Lys Asn Ala Phe Ile
            100                 105                 110

Ser Cys Ile Trp Lys Leu Asn Gln Arg Tyr Leu Arg Lys Lys Ile Asp
        115                 120                 125

Phe Val Asn Val Ser Ser Gln Leu Leu Glu Glu Ser Val Pro Ser Gly
    130                 135                 140

Glu Asn Gln Ser Val Thr Gly Gly Asp Glu Glu Val Val Asp Glu Tyr
145                 150                 155                 160

Gln Glu Leu Asn Ala Arg Glu Glu Gln Asp Ile Glu Ile Met Met Glu
                165                 170                 175

Gly Cys Glu Tyr Ala Ile Ser Asn Ala Glu Ala Phe Ala Glu Lys Leu
            180                 185                 190

Ser Arg Glu Leu Gln Val Leu Asp Gly Ala Asn Ile Gln Ser Ile Met
        195                 200                 205

Ala Ser Glu Lys Gln Val Asn Ile Leu Met Lys Leu Leu Asp Glu Ala
    210                 215                 220

Leu Lys Glu Val Asp Gln Ile Glu Leu Lys Leu Ser Ser Tyr Glu Glu
225                 230                 235                 240

Met Leu Gln Ser Val Lys Glu Gln Met Asp Gln Ile Ser Glu Ser Asn
                245                 250                 255

His Leu Ile His Leu Ser Asn Thr Asn Asn Val Lys Leu Leu Ser Glu
            260                 265                 270

Ile Glu Phe Leu Val Asn His Met Asp Leu Ala Lys Gly His Ile Lys
```

275 280 285

Ala Leu Gln Glu Gly Asp Leu Ala Ser Ser Arg Gly Ile Glu Ala Cys
290 295 300

Thr Asn Ala Ala Asp Ala Leu Leu Gln Cys Met Asn Val Ala Leu Arg
305 310 315 320

Pro Gly His Asp Leu Leu Leu Ala Val Lys Gln Gln Gln Gln Arg Phe
325 330 335

Ser Asp Leu Arg Glu Leu Phe Ala Arg Arg Leu Ala Ser His Leu Asn
340 345 350

Asn Val Phe Val Gln Gln Gly His Asp Gln Ser Ser Thr Leu Ala Gln
355 360 365

His Ser Val Glu Leu Thr Leu Pro Asn His His Pro Phe His Arg Asp
370 375 380

Leu Leu Arg Tyr Ala Lys Leu Met Glu Trp Leu Lys Ser Thr Asp Tyr
385 390 395 400

Gly Lys Tyr Glu Gly Leu Thr Lys Asn Tyr Met Asp Tyr Leu Ser Arg
405 410 415

Leu Tyr Glu Arg Glu Ile Lys Asp Phe Phe Glu Val Ala Lys Ile Lys
420 425 430

Met Thr Gly Thr Thr Lys Glu Ser Lys Lys Phe Ala Thr Leu Pro Arg
435 440 445

Lys Glu Ser Ala Val Lys Gln Glu Thr Glu Ser Leu His Gly Ser Ser
450 455 460

Gly Lys Leu Thr Gly Ser Thr Ser Ser Leu Asn Lys Leu Ser Val Gln
465 470 475 480

Ser Ser Gly Asn Arg Arg Ser Gln Ser Ser Ser Leu Leu Asp Met Gly
485 490 495

Asn Met Ser Ala Ser Asp Leu Asp Val Ala Asp Arg Thr Lys Phe Asp
500 505 510

Lys Ile Phe Glu Gln Val Leu Ser Glu Leu Glu Pro Leu Cys Leu Ala
515 520 525

Glu Gln Asp Phe Ile Ser Lys Phe Phe Lys Leu Gln Gln His Gln Ser
530 535 540

Met Pro Gly Thr Met Ala Glu Ala Glu Asp Leu Asp Gly Gly Thr Leu
545 550 555 560

Ser Arg Gln His Asn Cys Gly Thr Pro Leu Pro Val Ser Ser Glu Lys
565 570 575

Asp Met Ile Arg Gln Met Met Ile Lys Ile Phe Arg Cys Ile Glu Pro
580 585 590

Glu Leu Asn Asn Leu Ile Ala Leu Gly Asp Lys Ile Asp Ser Phe Asn
595 600 605

Ser Leu Tyr Met Leu Val Lys Met Ser His His Val Trp Thr Ala Gln
610 615 620

Asn Val Asp Pro Ala Ser Phe Leu Ser Thr Thr Leu Gly Asn Val Leu
625 630 635 640

Val Thr Val Lys Arg Asn Phe Asp Lys Cys Ile Ser Asn Gln Ile Arg
645 650 655

Gln Met Glu Glu Val Lys Ile Ser Lys Lys Ser Lys Val Gly Ile Leu
660 665 670

Pro Phe Val Ala Glu Phe Glu Glu Phe Ala Gly Leu Ala Glu Ser Ile
675 680 685

Phe Lys Asn Ala Glu Arg Arg Gly Asp Leu Asp Lys Ala Tyr Thr Lys
690 695 700

Leu Ile Arg Gly Val Phe Val Asn Val Glu Lys Val Ala Asn Glu Ser
705 710 715 720

Gln Lys Thr Pro Arg Asp Val Val Met Met Glu Asn Phe His His Ile
725 730 735

```
Phe Ala Thr Leu Ser Arg Leu Lys Ile Ser Cys Leu Glu Ala Glu Lys
            740                 745                 750

Lys Glu Ala Lys Gln Lys Tyr Thr Asp His Leu Gln Ser Tyr Val Ile
        755                 760                 765

Tyr Ser Leu Gly Gln Pro Leu Glu Lys Leu Asn His Phe Phe Glu Gly
    770                 775                 780

Val Glu Ala Arg Val Ala Gln Gly Ile Arg Glu Glu Glu Val Ser Tyr
785                 790                 795                 800

Gln Leu Ala Phe Asn Lys Gln Glu Leu Arg Lys Val Ile Lys Glu Tyr
                805                 810                 815

Pro Gly Lys Glu Val Lys Lys Gly Leu Asp Asn Leu Tyr Lys Lys Val
            820                 825                 830

Asp Lys His Leu Cys Glu Glu Glu Asn Leu Leu Gln Val Val Trp His
        835                 840                 845

Ser Met Gln Asp Glu Phe Ile Arg Gln Tyr Lys His Phe Glu Gly Leu
    850                 855                 860

Ile Ala Arg Cys Tyr Pro Gly Ser Gly Val Thr Met Glu Phe Thr Ile
865                 870                 875                 880

Gln Asp Ile Leu Asp Tyr Cys Ser Ser Ile Ala Gln Ser His
                885                 890
```

<210> 9
<211> 571
<212> PRT
<213> Rattus norvegicus

<400> 9

```
Met Met Pro Val Ala Ser Ser Leu Ile Lys Met Pro Gly Leu Phe His
1               5                   10                  15

Pro Val Ile Arg Pro Trp Glu Ile Pro Lys Gly Pro Glu Ile Arg Asn
            20                  25                  30
```

```
Thr Val Ile Pro Asn Thr Asp Thr Thr Ser Gly Ser Phe Asn Tyr Met
        35                  40                  45

Asp Tyr Leu Ser Arg Leu Tyr Glu Arg Glu Ile Lys Asp Phe Phe Glu
    50                  55                  60

Val Ala Lys Met Lys Met Thr Gly Thr Thr Lys Glu Ser Lys Lys Phe
65                  70                  75                  80

Ala Thr Leu Pro Arg Lys Glu Ser Ala Val Lys Gln Glu Thr Glu Arg
                85                  90                  95

Met Ser Gln Gly Arg Val Ser Cys Ser Val Ser Thr Val Leu Ser Asp
            100                 105                 110

Pro His Arg Cys Pro Ile Cys Phe Gly Leu Glu Ser Thr Ile Ala Leu
        115                 120                 125

Pro Ser Gly Gln Asp Pro Val Ser Leu His Gly Ser Ser Gly Lys Leu
    130                 135                 140

Thr Gly Ser Thr Ser Ser Leu Asn Lys Leu Ser Val Gln Ser Ser Gly
145                 150                 155                 160

Ser Arg Arg Ser Gln Ser Ser Ser Leu Leu Asp Met Gly Asn Met Ser
                165                 170                 175

Ala Ser Asp Leu Asp Val Ala Asp Arg Thr Lys Phe Asp Lys Ile Phe
            180                 185                 190

Glu Gln Val Leu Ser Glu Leu Glu Pro Leu Cys Leu Ala Glu Gln Asp
        195                 200                 205

Phe Ile Ser Lys Phe Phe Lys Leu Gln Gln His Gln Asn Leu Ser Ala
    210                 215                 220

Ser Met Ala Glu Ala Glu Asp Leu Asp Gly Gly Ser Leu Ser Arg Pro
225                 230                 235                 240

Gln Ser Ser Gly Ser Leu Leu Pro Val Ser Ser Glu Lys Asp Met Ile
                245                 250                 255
```

```
Arg Gln Met Met Ile Lys Ile Phe Arg Cys Ile Glu Pro Glu Leu Asn
            260                 265                 270

Asn Leu Ile Ala Leu Gly Asp Lys Val Asp Ser Phe Asn Ser Leu Tyr
        275                 280                 285

Met Leu Val Lys Met Ser His His Val Trp Thr Ala Gln Asn Val Asp
    290                 295                 300

Pro Ala Ser Phe Leu Ser Thr Thr Leu Gly Asn Val Leu Val Thr Val
305                 310                 315                 320

Lys Arg Asn Phe Asp Lys Cys Ile Ser Asn Gln Ile Arg Gln Met Glu
                325                 330                 335

Glu Val Lys Ile Ser Lys Lys Ser Lys Val Gly Ile Leu Pro Phe Val
            340                 345                 350

Ala Glu Phe Glu Glu Phe Ala Gly Leu Ala Glu Ser Ile Phe Lys Ser
        355                 360                 365

Ala Glu Arg Arg Gly Asp Leu Asp Lys Ala Tyr Thr Lys Leu Ile Arg
    370                 375                 380

Gly Val Phe Ile Asn Val Glu Lys Val Ala Asn Glu Ser Gln Lys Thr
385                 390                 395                 400

Pro Arg Asp Val Val Met Met Glu Asn Phe His His Ile Phe Ala Thr
                405                 410                 415

Leu Ser Arg Leu Lys Ile Ser Cys Leu Glu Ala Glu Lys Lys Glu Ala
            420                 425                 430

Lys Gln Lys Tyr Thr Asp His Leu Gln Ser Tyr Val Ile Tyr Ser Leu
        435                 440                 445

Gly Gln Pro Leu Glu Lys Leu Asn His Phe Phe Glu Gly Val Glu Ala
    450                 455                 460

Arg Val Ala Gln Gly Ile Arg Glu Glu Glu Val Ser Tyr Gln Leu Ala
465                 470                 475                 480

Phe Asn Lys Gln Glu Leu Arg Lys Val Ile Lys Glu Tyr Pro Gly Lys
```

485 490 495

Glu Val Lys Lys Gly Leu Asp Asn Leu Tyr Lys Lys Val Asp Lys His
500 505 510

Leu Cys Glu Glu Glu Asn Leu Leu Gln Val Val Trp His Ser Met Gln
515 520 525

Asp Glu Phe Ile Arg Gln Tyr Lys His Phe Glu Gly Leu Ile Ala Arg
530 535 540

Cys Tyr Pro Gly Ser Gly Val Thr Met Glu Phe Thr Ile Gln Asp Ile
545 550 555 560

Leu Asp Tyr Cys Ser Ser Ile Ala Gln Ser His
565 570

<210> 10
<211> 894
<212> PRT
<213> Mus musculus

<400> 10

Met Thr Ala Ile Lys His Ala Leu Gln Arg Asp Ile Phe Thr Pro Asn
1 5 10 15

Asp Glu Arg Leu Leu Ser Ile Val Asn Val Cys Lys Ala Gly Lys Lys
20 25 30

Lys Lys Asn Cys Phe Leu Cys Ala Thr Val Thr Thr Glu Arg Pro Val
35 40 45

Gln Val Lys Val Val Lys Val Lys Lys Ser Asp Lys Gly Asp Phe Tyr
50 55 60

Lys Arg Gln Ile Ala Trp Ala Leu Arg Asp Leu Ala Val Val Asp Ala
65 70 75 80

Lys Asp Ala Ile Lys Glu Asn Pro Glu Phe Asp Leu His Phe Glu Lys
85 90 95

Val Tyr Lys Trp Val Ala Ser Ser Thr Ala Glu Lys Asn Ala Phe Ile
100 105 110

Ser Cys Ile Trp Lys Leu Asn Gln Arg Tyr Leu Arg Lys Lys Ile Asp
115 120 125

Phe Val Asn Val Ser Ser Gln Leu Leu Glu Glu Ser Val Pro Ser Gly
130 135 140

Glu Asn Gln Ser Val Ala Gly Gly Asp Glu Glu Ala Val Asp Glu Tyr
145 150 155 160

Gln Glu Leu Asn Ala Arg Glu Glu Gln Asp Ile Glu Ile Met Met Glu
165 170 175

Gly Cys Glu Cys Ala Ile Ser Asn Ala Glu Ala Phe Ala Glu Lys Leu
180 185 190

Ser Arg Glu Leu Gln Val Leu Asp Gly Ala Asn Ile Gln Ser Ile Met
195 200 205

Ala Ser Glu Lys Gln Val Asn Thr Leu Met Gln Leu Leu Asp Glu Ala
210 215 220

Leu Thr Glu Val Asp Gln Ile Glu Leu Lys Leu Ser Ser Tyr Glu Glu
225 230 235 240

Met Leu Gln Ser Val Lys Glu Gln Met Asp Gln Ile Ser Glu Ser Asn
245 250 255

His Leu Ile His Leu Ser Asn Thr Asn Asn Val Lys Leu Leu Ser Glu
260 265 270

Ile Glu Phe Leu Val Asn His Met Asp Leu Ala Lys Gly His Ile Lys
275 280 285

Ala Leu Gln Glu Gly Asp Leu Val Ser Ser Arg Gly Ile Glu Ala Cys
290 295 300

Thr Asn Ala Ala Asp Ala Leu Leu Gln Cys Met Asn Val Ala Leu Arg
305 310 315 320

Pro Gly His Asp Met Leu Leu Ala Ile Lys Gln Gln Gln Gln Arg Phe
325 330 335

Ser Asp Leu Arg Glu His Phe Ala Arg Arg Leu Ala Ser His Leu Asn
340 345 350

Asn Val Phe Val Gln Gln Gly His Asp Gln Ser Ser Thr Leu Ala Gln
355 360 365

His Ser Val Glu Leu Thr Leu Pro Asn His His Pro Phe His Arg Asp
370 375 380

Leu Leu Arg Tyr Ala Lys Leu Met Glu Trp Leu Lys Ser Thr Asp Tyr
385 390 395 400

Gly Lys Tyr Glu Gly Leu Thr Lys Asn Tyr Met Asp Tyr Leu Ser Arg
405 410 415

Leu Tyr Glu Arg Glu Ile Lys Asp Phe Phe Glu Val Ala Lys Met Lys
420 425 430

Met Thr Gly Thr Ser Lys Glu Ser Lys Lys Phe Ala Thr Leu Pro Arg
435 440 445

Lys Glu Ser Ala Val Lys Gln Glu Thr Glu Ser Leu His Gly Ser Ser
450 455 460

Gly Lys Leu Thr Gly Ser Thr Ser Ser Leu Asn Lys Leu Ser Val Gln
465 470 475 480

Ser Ser Gly Ser Arg Arg Ser Gln Ser Ser Ser Leu Leu Asp Met Gly
485 490 495

Asn Met Ser Ala Ser Asp Leu Asp Val Ala Asp Arg Thr Lys Phe Asp
500 505 510

Lys Ile Phe Glu Gln Val Leu Ser Glu Leu Glu Pro Leu Cys Leu Ala
515 520 525

Glu Gln Asp Phe Ile Ser Lys Phe Phe Lys Leu Gln Gln His Gln Asn
530 535 540

Met Ser Ala Ser Met Thr Glu Ala Glu Asp Leu Asp Gly Gly Ser Leu
545 550 555 560

Ser Arg Gln His Ser Ser Gly Thr Leu Leu Pro Val Ser Ser Glu Lys

565 570 575

Asp Met Ile Arg Gln Met Met Ile Lys Ile Phe Arg Cys Ile Glu Pro
580 585 590

Glu Leu Asn Asn Leu Ile Ala Leu Gly Asp Lys Val Asp Ser Phe Asn
595 600 605

Ser Leu Tyr Met Leu Val Lys Met Ser His His Val Trp Thr Ala Gln
610 615 620

Asn Val Asp Pro Ala Ser Phe Leu Ser Thr Thr Leu Gly Asn Val Leu
625 630 635 640

Val Thr Val Lys Arg Asn Phe Asp Lys Cys Ile Ser Asn Gln Ile Arg
645 650 655

Gln Met Glu Glu Val Lys Ile Ser Lys Lys Ser Lys Val Gly Ile Leu
660 665 670

Pro Phe Val Ala Glu Phe Glu Glu Phe Ala Gly Leu Ala Glu Ser Ile
675 680 685

Phe Lys Asn Ala Glu Arg Arg Gly Asp Leu Asp Lys Ala Tyr Thr Lys
690 695 700

Leu Ile Arg Gly Val Phe Ile Asn Val Glu Lys Val Ala Asn Glu Ser
705 710 715 720

Gln Lys Thr Pro Arg Asp Val Val Met Met Glu Asn Phe His His Ile
725 730 735

Phe Ala Thr Leu Ser Arg Leu Lys Ile Ser Cys Leu Glu Ala Glu Lys
740 745 750

Lys Glu Ala Lys Gln Lys Tyr Thr Asp His Leu Gln Ser Tyr Val Ile
755 760 765

Tyr Ser Leu Gly Gln Pro Leu Glu Lys Leu Asn His Phe Phe Glu Gly
770 775 780

Val Glu Ala Arg Val Ala Gln Gly Ile Arg Glu Glu Glu Val Ser Tyr
785 790 795 800

Gln Leu Ala Phe Asn Lys Gln Glu Leu Arg Lys Val Ile Lys Glu Tyr
805 810 815

Pro Gly Lys Glu Val Lys Lys Gly Leu Asp Asn Leu Tyr Lys Lys Val
820 825 830

Asp Lys His Leu Cys Glu Glu Glu Asn Leu Leu Gln Val Val Trp His
835 840 845

Ser Met Gln Asp Glu Phe Ile Arg Gln Tyr Lys His Phe Glu Gly Leu
850 855 860

Ile Ala Arg Cys Tyr Pro Gly Ser Gly Val Thr Met Glu Phe Thr Ile
865 870 875 880

Gln Asp Ile Leu Asp Tyr Cys Ser Ser Ile Ala Gln Ser His
885 890

<210> 11
<211> 889
<212> PRT
<213> Drosophila melanogaster

<400> 11

Met Leu Ser Ile Gly Ala Met Ala Asn Ile Lys His Thr Leu Gln Lys
1 5 10 15

Glu Leu Phe Leu Ala Ser Gly Glu Arg Leu Leu Ser Val Val Thr Val
20 25 30

Val Lys Lys Lys Asp Lys Lys Pro Cys Tyr Leu Cys Val Val Thr Thr
35 40 45

Ala Pro Pro Val Pro Val Val Thr Leu Cys Leu Ile Lys Gln Ser Glu
50 55 60

Gln Arg Glu Gly Glu Tyr Lys Arg Lys Arg Ser Trp Gln Leu Asp Glu
65 70 75 80

Ile Lys Trp Val Asp Gly Arg Asn Glu Gln Phe Gln Thr His Glu Phe
85 90 95

```
Asp Leu Gln Leu Glu Lys Leu Tyr Lys Trp Tyr Ala Leu Asn Pro His
            100                 105                 110

Glu Arg Gln Asn Phe Leu Ala Val Leu Asn Arg Gln Ile Gln Lys Ser
        115                 120                 125

Val Arg Gly Gln Arg Ala Glu Phe Arg Asn Val Pro Ala Ala Trp Leu
    130                 135                 140

Ser Glu Lys Ser Pro Glu Lys Val Ala Leu Gly Arg Ala Val Gln Lys
145                 150                 155                 160

Thr Gln His Met Asp Asp Glu Glu Asp Glu Glu Glu Glu Ala Gln Glu
                165                 170                 175

Phe Thr Ala Leu Thr Asp Lys Glu Ala Asn Glu Leu Gly Lys Leu Phe
            180                 185                 190

Ser Glu Cys Asp Phe Ala Ile Lys Asp Ala Glu Gln Phe Ile Glu Gln
        195                 200                 205

Leu Ser Arg Glu Leu His Asp Leu Asp Gly Ala Asn Met Gln Ser Val
    210                 215                 220

Leu Ala Ser Glu Gln Lys Val Leu Lys Met Met Glu His Ile Asp Asn
225                 230                 235                 240

Ala Ile Ser Glu Ala Asp Lys Phe Glu Asn Arg Leu Asp Ser Tyr Glu
                245                 250                 255

Asp Ile Leu Gly His Val Lys Glu Thr Met Glu Lys Ile Gly Gly Lys
            260                 265                 270

Asn Ala Met Ile Glu Ile Ala Asn Asn Asn Asn Ile Lys Leu Met Lys
        275                 280                 285

Glu Leu Asn Lys Val Ile Ser Gln Leu Asp Leu Pro His Ser Gln Gln
    290                 295                 300

Gln Ala Leu Asp Glu Pro Asp Leu Lys Thr Ala Asn Gly Arg Lys Ala
305                 310                 315                 320
```

Ala Ile Ala Ala Ala Gln Cys Leu Gln Gln Ala Met Asn Ser Asp Ile
325 330 335

Asp Pro Ala Leu Leu Arg Leu Glu Ala Val Gln Asp Gln Arg Lys Arg
340 345 350

Phe Glu Lys Trp Lys Gln Lys Phe Ser Ala Thr Val Ser Arg Phe Met
355 360 365

Asn Asn Leu Phe Ile His Leu Gly Asn Glu Ile Gly Asp Met Gln Val
370 375 380

Thr Ser Thr Glu Leu Thr Leu Pro Asn His Ser Asn Val His Arg Glu
385 390 395 400

Leu Thr Pro Tyr Thr Glu Leu Met His Trp Thr Lys Ala Met Asp Arg
405 410 415

Lys Thr Tyr Asp Gly Leu Met Arg Val Tyr Thr Ala Ser Leu Ser Lys
420 425 430

Ile Tyr Asp Arg Asp Val Arg Asn Phe Phe Asn Leu Ala Lys Ile Gln
435 440 445

Val Thr Glu Lys Leu Arg Asn Ser Arg Glu Asp Leu Asp Met Ser Thr
450 455 460

Ser Ser Arg Lys Ser Ala Val Ser Thr Ile Pro Tyr Gly Thr Leu Gly
465 470 475 480

Ile Asn Arg Asp Gln Trp Gly Pro Gly Val Glu Thr Ala Asp Arg Met
485 490 495

Arg Phe Asp Ala Leu Leu Glu Lys Val Leu Ala Glu Leu Glu Pro Ile
500 505 510

Ala Leu Gln Glu Gln Leu Phe Cys Ile Asn Phe Phe Gln Met Asp Val
515 520 525

Ile Ser Pro Thr Thr Lys Asn Thr Gln Thr Thr Leu Glu Met Glu Lys
530 535 540

Ala Val Asp Met Thr Gln Ser Ile Ile Ser Gly Ala Val Ser Pro Ser

545 550 555 560

Gly Asp Gly Val Pro Gln Lys Arg Ile Asp Arg Gln Ile Asn Glu Asp
565 570 575

Val Arg Lys Leu Met Met Gly Leu Phe Gly Cys Leu Glu Pro Glu Leu
580 585 590

Val Ser Phe Ile Gln Ser Phe Glu Arg Val Asp Ser Phe Tyr Ser Leu
595 600 605

Tyr Val Phe Val Arg Leu Thr Gln His Val Met Ser Ala Gln Asp Thr
610 615 620

His Ser Phe Leu Ser Met Thr Phe Ala Ser Ala Leu Val Gln Val Lys
625 630 635 640

Arg Ser Phe Asp Arg Phe Met Gln Asn Gln Leu Leu Ser Ile Arg Glu
645 650 655

Ala Lys Leu His Lys Arg Ser Lys Ala Ile Leu Pro Tyr Val Glu Asn
660 665 670

Phe Glu Asn Phe Ala Gln Thr Ala Glu Gly Ile Phe Arg Lys Ser Asp
675 680 685

Arg Arg Thr Asp Met Glu Lys Trp Tyr Leu Gln Leu Val Asn Ala Ile
690 695 700

Phe Glu Gly Ile Gln Leu His Ser Gln Glu His Pro Lys Thr Pro Ile
705 710 715 720

Gln Val Val Arg Met Glu Asn Tyr His His Met Tyr Ala Leu Leu Ala
725 730 735

Gln Leu Lys Val Pro Gly Leu Asp Ala Leu Lys Lys Glu Ala Lys Lys
740 745 750

Cys Tyr Asn Asp Ala Leu Lys Ala Tyr Val Thr Gln Tyr Phe Gly Arg
755 760 765

Pro Leu Glu Lys Leu Asn Gln Phe Phe Glu Gly Val Gln Leu Lys Val
770 775 780

```
Ala Gln Gly Val Lys Glu Thr Glu Ile Ser Tyr Gln Met Ala Phe Ser
785                 790                 795                 800

Lys Gln Glu Leu Arg Lys Val Ile Ala Gln Tyr Pro Ala Arg Glu Val
                805                 810                 815

Lys Lys Gly Leu Glu Asn Leu Tyr Lys Lys Val Glu Lys His Leu Ser
            820                 825                 830

Glu Glu Glu Asn Leu Leu Gln Val Val Trp His Ala Met Gln Glu Glu
        835                 840                 845

Phe Ile Ala Gln Tyr Asn Tyr Leu Glu Glu Arg Ile Gln Lys Cys Tyr
    850                 855                 860

Ala Gly Ala Met Ile Asn Leu Glu Phe Asn Ile Gln Asp Ile Leu Ala
865                 870                 875                 880

Phe Phe Ser Asp Ile Ala Arg Ser His
                885
```